UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: FEB 2 5 1993

SUBJECT: ON-SCENE COORDINATOR'S REPORT - Removal Action at the Bohaty Drum Site, Medina Township, Medina County, Ohio (Site ID #PN)

FROM: Robert J. Bowden, Chief
Emergency and Enforcement Response Branch, HSE-5J

TO: Debbie Dietrich, Acting Director
Emergency Response Division, OS-210

THRU: Jodi Traub, Acting Associate Division Director
Office of Superfund, HS-6J

Attached is the On-Scene Coordinator's (OSC) Report for the removal action conducted at the Bohaty Drum site located in Medina Township, Medina County, Ohio. The report follows the format outlined in the National Contingency Plan, Section 300.165. This removal began on January 15, 1992, and was completed on May 7, 1992. The OSC for this removal action was Steven L. Renninger.

The site posed an immediate threat to human health and the environment. The action was taken to mitigate threats posed by the presence of open and leaking drums of acids, corrosives, paint waste, PCBs, pesticides, lab-pack chemicals, solvents, and other ignitable materials.

Costs under the control of the OSC are estimated at $652,720, of which $556,986 was for the Emergency Response Cleanup Services Contractor.

Any indication in this OSC Report of specific costs incurred at the site is only an approximation, subject to audit and final definitization by the United States Environmental Protection Agency. The OSC Report is not a final reconciliation of the costs associated with a particular site.

Portions of the OSC Report appendices may contain confidential business or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

This site is not on the National Priorities List.

Attachment

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ESS Reports Coordinator, HSE-5J, w/OSC Rpt
EERB Site File, HSE-5J, w/OSC Rpt

ON-SCENE COORDINATOR'S REPORT

CERCLA REMOVAL ACTION

BOHATY DRUM SITE

MEDINA TOWNSHIP, OHIO

SITE ID # PN

DELIVERY ORDER NO. 7460-05-212

Removal Dates: JANUARY 15, 1992 - MAY 7, 1992

Steven L. Renninger
Response Section 1

1/25/93
Date

Emergency and Enforcement Response Branch
Office of Superfund
Waste Management Division
Region V
United States Environmental Protection Agency

EXECUTIVE SUMMARY

Site/Location: BOHATY DRUM SITE, MEDINA TOWNSHIP, OHIO
Removal Dates: JANUARY 15, 1992 - MAY 7, 1992

INCIDENT DESCRIPTION:

The Bohaty Drum site is a privately owned, 150-acre parcel of land in Medina Township, Medina County, Ohio. The removal action was taken to mitigate threats to public health posed by the presence of open and leaking drums of paints, acids, corrosives, PCBs, pesticides, lab-pack chemicals, paint wastes, solvents and other ignitable materials. These materials posed threats through direct contact and through the potential for fire or explosion.

ACTIONS TAKEN:

The United States Environmental Protection Agency (U.S. EPA) initiated a removal action on January 15, 1992. The following emergency removal activities were performed: all drums were identified and recovered from throughout the heavily overgrown property, recovered drums were overpacked to stabilize their contents until hazard categorization could be performed, contents of the drums were identified and waste streams assigned, partial drums of waste were consolidated where practicable, full drums of waste were overpacked into 85-gallon salvage drums, pesticide/herbicide-contaminated soil was excavated and placed in overpacks for disposal, RCRA-empty drums were crushed for disposal, and all wastes were shipped off site for disposal.

Approximately 57 cubic yards of paint waste solids (Hazardous Waste, Solid N.O.S. - D040) were shipped off site for disposal on February 28, March 11, and March 25, 1992. The paint waste was transported by Dart Trucking to Envirosafe Services of Ohio, Oregon, Ohio, for landfill disposal. Approximately 199 cubic yards of crushed, RCRA-empty steel drums (non hazardous, non-regulated material) and 32 cubic yards of spent personal protective equipment (PPE) (Hazardous Waste, Solid N.O.S., NA9189 - D007) were also transported to Envirosafe for landfill disposal. These wastes were transported off site between February 13 and March 25, 1992. On March 17, 1992, approximately 6,000 pounds of soil containing Heptachlor (pesticide) and 2,4-D (herbicide) (Hazardous Waste, Solid N.O.S., NA9189 - U240, P059, D016, D031, F001, F005) were transported by Tri-State Motor Transit Company for off-site disposal. The waste was shipped to ENSCO, Inc., in El Dorado, Arkansas, for incineration. Approximately 1,705 gallons of flammable liquids (Flammable Liquid, UN1993 - D001 and D008) were shipped off site for disposal on March 19, 1992. The flammable liquids were transported by Dart Trucking to Clark Processing, Dayton, Ohio, for fuel blending. Dart also transported 30,000 pounds of flammable solids (Flammable Solid, UN1325 - D001) to Clark Processing on March 17, 1992, with an additional 9,000 pounds of the same waste being transported on March 19, 1992. These wastes were fuel blended at Clark Processing's Dayton, Ohio, facility. On April 1, 1992, one drum (approximately 300

kilograms) of PCB-contaminated waste (Flammable Liquid, D001, D008, PCB) was shipped off site by Dart Trucking. The waste was sent to Aptus, Coffeyville, Kansas, for incineration. Six hundred gallons of Hazardous Waste Liquid, N.O.S. (NA 9189) was transported off site by Dynecol, Inc., to their Detroit, Michigan, facility for treatment and disposal on April 24, 1992. On April 28, 1992, Dart Trucking transported a load of crushed empty drums (non hazardous, non-regulated) and paint waste solids (Hazardous Waste Solid, N.O.S. - D040) to Envirosafe Services of Ohio, Oregon, Ohio, for landfill. The load was composed of 4 cubic yards of paint waste and 6 cubic yards of crushed drums. On May 7, 1992, the final shipment of waste was transported from site by Transtec Trucking to Aptus, Lakeville, Minnesota, for incineration. The load consisted of 24 drums (approximately 6,000 kilograms) of Hazardous Waste Solid, N.O.S. (D007, PCB). The proceeding information is summarized in the waste disposal log which appears as Table 1. All off-site disposal facilities were in compliance with the U.S. EPA off-site policy at the time of transportation and/or disposal of the wastes. All actions taken were consistent with the National Contingency Plan.

The removal was completed on May 7, 1992, at an estimated cost under control of the On-Scene Coordinator (OSC) of $652,720, of which $556,986 was for the Emergency Response Cleanup Services contractor. The OSC was Steven L. Renninger.

This site is not on the National Priorities List.

Steven L. Renninger, On-Scene Coordinator
Emergency and Enforcement Response Branch
United States Environmental Protection Agency
Region V

1/25/93
Date

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Emergency and Enforcement Response Branch
Office of Superfund, U.S. EPA, Region V

OSC REPORT STANDARD APPENDICES LIST *

Site Name: Bohaty Drum Site, Medina Township, Medina County, Ohio

Site ID#: PN Delivery Order #: 7460-05-212

1. OPERATIONAL FILES

1-A - Action Memos/Additional Funding Requests/Time Exemptions
1-B - Enforcement
1-C - Site Safety Plan
1-D - POLREPs
1-E - Daily Work Orders/Reports
1-F - Site Monitoring Logs (Air, etc.)
1-G - Site Entry/Exit Log
1-H - Hot Zone Entry/Exit Log
1-I - Equipment/Material Log
1-J - Equipment Tracking Sheets
1-K - Activity Log
1-L - Security Log
1-M - Photograph Log
1-N - Site Log(s)
1-O - Site Maps
1-P - General Correspondence/Information
1-Q - Community Relations/Newspaper Articles

2. FINANCIAL FILES

2-A - Delivery Orders/Procurement Requests
Modifications to contract (ERCS)
2-B - Technical Directive Documents/Modifications (TAT)
2-C - Daily Cost Reporting U.S. EPA Form 1900-55's
2-D - Daily Cost Summaries
2-E - Incident Obligation Log/U.S. EPA Costs
2-F - ERCS Invoices
2-G - Cost Projections
2-H - TAT Cost Tracking
2-I - Subcontractor Bid Sheets

3. TECHNICAL FILES

3-A - TAT Site Assessment
3-B - Compatibility Testing

*Portions of these OSC Report Appendices may contain confidential business information or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

* Note that certain files for this site are maintained elsewhere by EERB; these appendices are those files maintained by the OSC during the removal action.

1.0 SUMMARY OF EVENTS

1.1 Location/Initial Situation

The Bohaty Drum site is a privately owned, 150-acre parcel of land in Medina Township, Medina County, Ohio (Figure 1). The parcel is bounded on the north by the Stonegate housing development, on the south by commercial businesses, on the west by State Route #42 (Pearl Road), and on the east by wooded lands (Figure 2). The Bohaty family operates a farm machine repair business from the extreme western perimeter of the property. Access to the property is largely unrestricted as only the front of the property (along Pearl Road) is bounded by a viable fence. The northern property boundary is marked by an extremely dilapidated wire fence that is absent in places. The site topography is gently rolling with a slight depression to the northeast. The majority of the 150-acre parcel is undeveloped and covered with woods or dense brush. A large pond, several acres in size, covers a portion of the property and areas adjacent to the pond are marshy year-round.

The 150-acre parcel of land has been owned by the Bohaty family for at least three generations. Historical aerial photographs from 1957 through 1990 document the accumulation of scrap and farm machinery piles beginning at the west property boundary and, as the years passed, extending in an eastward direction. Aerial photographs also depict the transition of the adjacent area from exclusively rural to largely residential and commercial.

1.2 Previous Actions/Site History

The presence of drums on the Bohaty property was brought to the attention of the Ohio Environmental Protection Agency (OEPA) in 1987 by the Medina Township Fire Department (MTFD). The MTFD responded to a grass fire at the Bohaty property on March 30, 1987, and, in the process of fighting the fire, discovered numerous 55-gallon drums.

On March 30, 1987, Craig Kleinhenz and Debby Berg of the OEPA Special Investigations Unit inspected the Bohaty site with MTFD Chief Dave Case. The OEPA site inspection report noted approximately 300 abandoned drums in deteriorated condition containing paint waste, laboratory chemicals, and a red sludge material. OEPA inspectors collected a sample of one drum of sludge material and analyzed the material for EP Toxicity (Metals); the results were negative. The report also noted that the City of Medina had placed a sewer line through a central portion of the property.

On August 17, 1989, Dan Osterfeld and Karla Auker of the OEPA Division of Emergency Response and Remedial Response (DERR) reinspected the Bohaty property and interviewed MTFD Fire Chief Dave Case. The August 17, 1989, OEPA report summarized the following site conditions:

1) Approximately 300 abandoned drums in poor condition;

2) Drums contained paint waste, lab pack chemicals, and chrome waste;

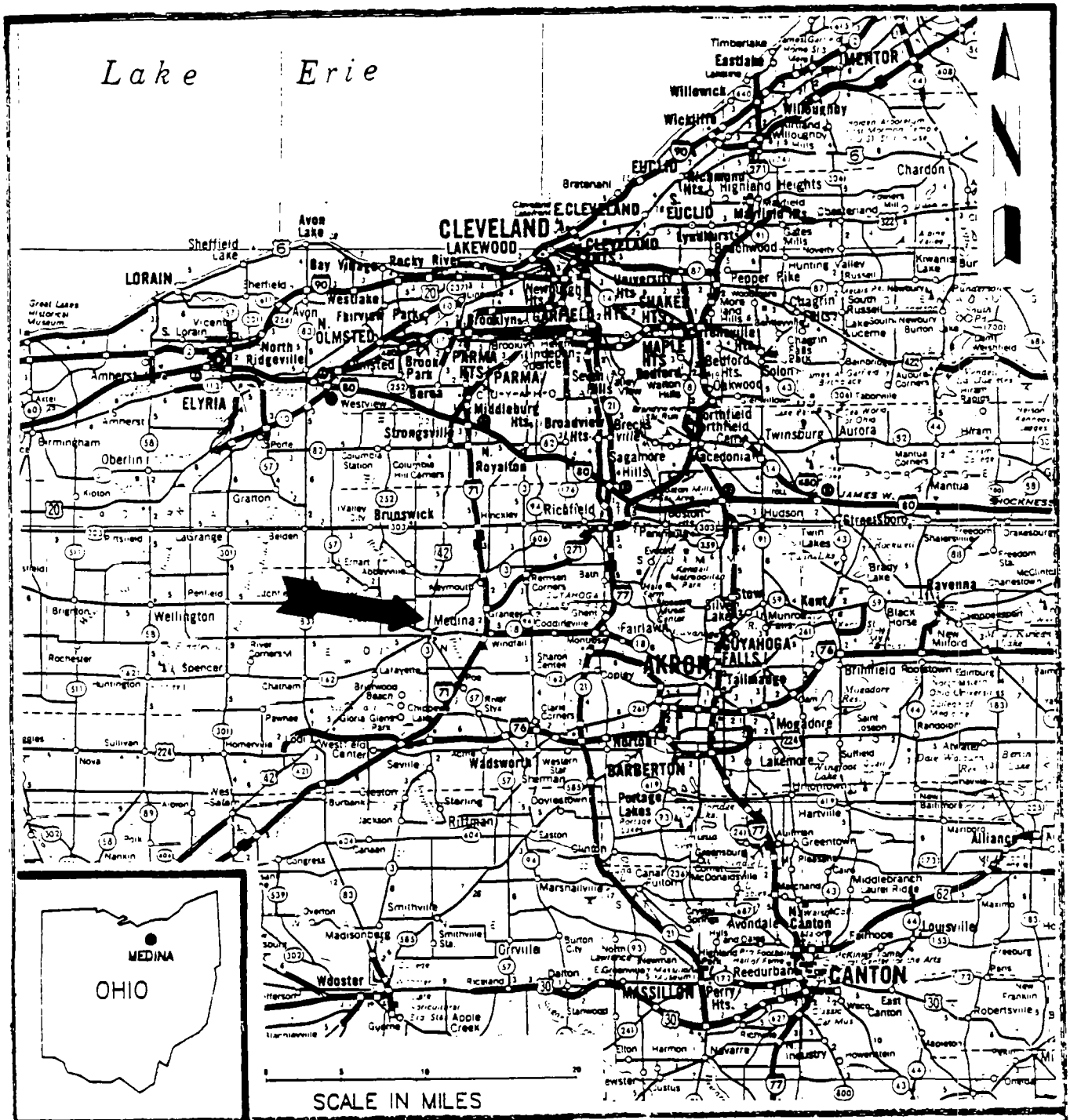

FIGURE 1

GENERAL LOCATION MAP

BOHATTY DRUM SITE

MEDINA TOWNSHIP

MEDINA COUNTY, OHIO

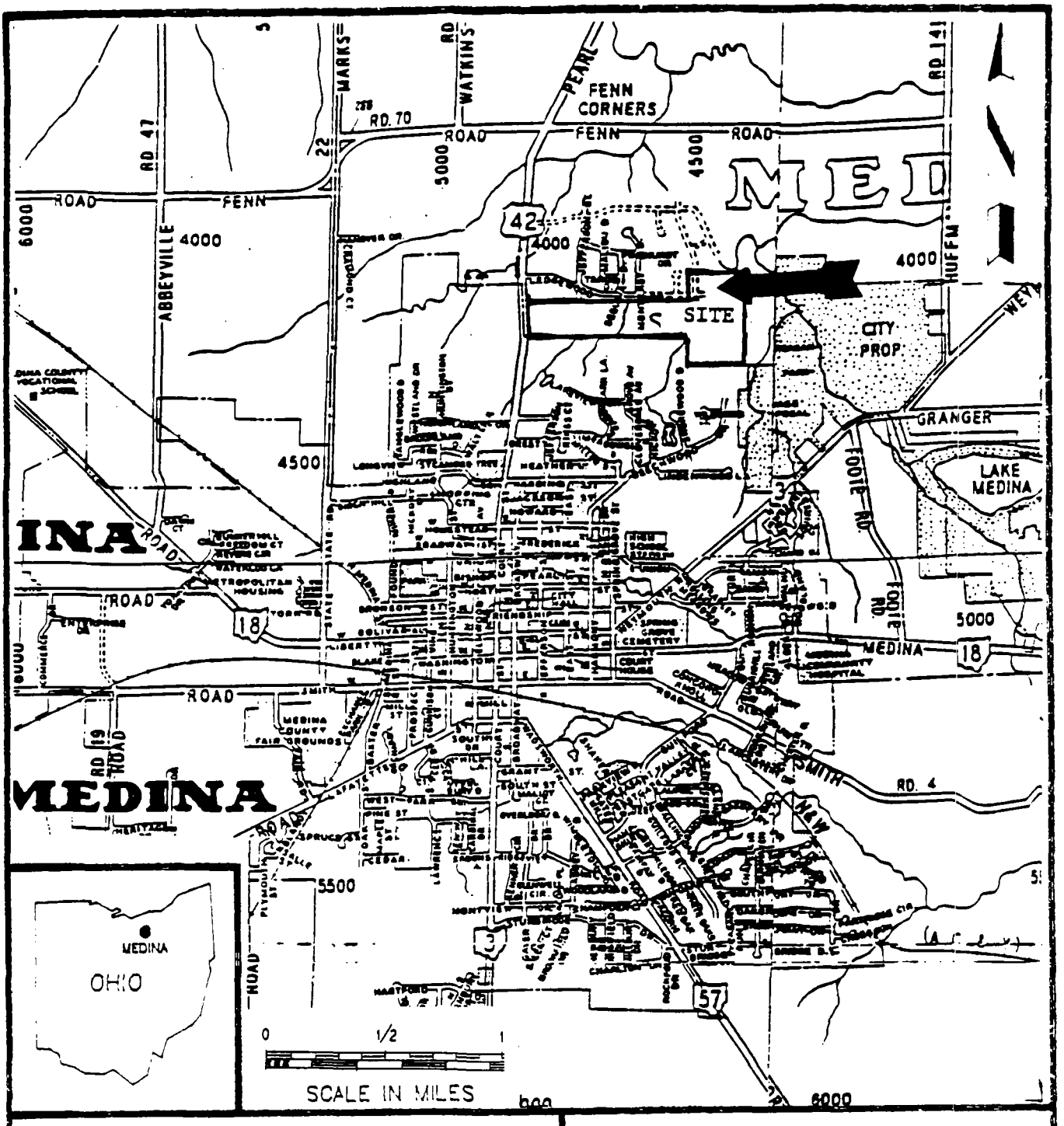

FIGURE 2

SITE LOCATION MAP

BOHATTY DRUM SITE

MEDINA TOWNSHIP

MEDINA COUNTY, OHIO

3) Air monitoring of drums indicated elevated levels of organic vapors; and,

4) Labels indicated drums contained diisocyanate and tetrahydrofuran.

On September 16, 1991, OEPA DERR requested assistance from United States Environmental Protection Agency (U.S. EPA) Region V, Emergency and Enforcement Response Branch, Response Section 1. On October 8, 1991, U.S. EPA On-Scene Coordinator (OSC) Steve Renninger and U.S. EPA Technical Assistance Team (TAT) members conducted a site investigation at the Bohaty Drum site. During the investigation, the OSC noted that the approximately 400 drums distributed throughout the site were in seven general groupings. Drums were noted to be in poor, detericrated condition and access to the site was unrestricted. Numerous drums were noted to have spilled their contents onto the surrounding soil. Several drum groups were located within a marshy area through which an intermittent stream passes. This stream continued off the property and through the adjacent Stonegate residential area. Although only a fraction of the drums were inspected internally, the OSC noted the following drum waste streams: paint waste, lab-pack chemicals, and petroleum sludge. Label information from numerous drums indicates potential additional waste streams, including: trichloroethylene, diisocyanate, chrome waste, and tetrahydrofuran. Based on air monitoring results, the TAT collected three samples from observed drum groups. All samples collected during the October 8, 1991, U.S. EPA site investigation were laboratory analyzed and the results indicated that the drums contained characteristic hazardous waste by virtue of ignitability.

Based upon observations, past history, and analytical results, OSC Renninger was able to establish that the Bohaty Drum site was an imminent and substantial threat to human health and the environment. These findings were documented in a Site Assessment Report prepared by the TAT and submitted to the U.S. EPA on October 25, 1992.

1.3 Threat to Public Health and/or the Environment

The conditions at the Bohaty Drum site, as documented, meet the criteria for a removal action as stated in the National Contingency Plan (NCP), Section 300.415(b)(2), specifically:

- Actual or potential exposure to nearby human populations, animals or the food chain from hazardous substances or pollutants or contaminants;

During the October 8, 1991, investigation, the OSC noted approximately 400 abandoned drums throughout the Bohaty Drum site. Drums contained paint waste, labpack chemicals, and sludges and were noted to be in deteriorated condition with unrestricted site access. Potential exposure pathways included direct contact with drums or drum contents leaking into marsh, stream, or pond areas. The stream runs through the

central portion of the site and directly into the adjacent Stonegate residential subdivision.

- o Actual or potential contamination of drinking water supplies or sensitive ecosystems;

During the October 8, 1991, site investigation, the OSC noted several groups of deteriorated drums within a central marsh area of the Bohaty site. Abandoned drums located within the marsh area were noted to contain lab-pack chemicals and sludges. An intermittent stream drains the marsh area directly to the Stonegate residential area.

- o Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers that may pose a threat of release;

The OSC noted approximately 400 abandoned drums throughout the Bohaty Drum site during the October 8, 1991, site investigation. Drums were in deteriorated condition, many having spilled their contents onto the ground. Drums were noted to contain paint waste, petroleum sludges, and lab-pack chemicals. U.S. EPA TAT samples indicated drums contained ignitable wastes.

- o Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

Northcentral Ohio has extreme weather fluctuations from season to season. This weather pattern exposes drums stored outdoors to the stresses of a freeze-thaw cycle which could promote drum failure. During the October 8, 1991, site investigation, the OSC noted that weather conditions had affected the integrity of the drums. Many drums were open, rusted, or bulging due to extreme weather conditions.

- o Threat of fire or explosion;

Drum samples obtained during the October 8, 1991, U.S. EPA site investigation indicated numerous drums contained ignitable wastes. The history of the Bohaty Drum site includes a grass fire as recently as March 20, 1987. During the response to the March 20, 1987, fire, MTFD discovered and documented drums in the immediate fire area. Therefore, the threat of fire or explosion existed and, if such an event occurred, contaminants could have become airborne and may have affected nearby populations.

1.3.1 Natural Resource Damage

No formal study was conducted as to the dangers the solvents, pesticides, poly-chlorinated biphenols (PCBs), lab-pack chemicals, and paint wastes posed to our natural resources. However, the risks involved were noted and the removal undertaken as quickly as possible.

During the course of the removal action, the U.S. EPA's Environmental Response Team (ERT) conducted sampling to determine the condition of the stream and pond. Samples collected included off-site background samples, several from the stream course as it passes through the Bohaty property, and several from stream locations within the Stonegate property. Samples were analyzed for physical parameters, including pH, total organic carbon, dissolved oxygen, and others. Analytical results demonstrated no significantly elevated levels.

1.4 Attempts to Obtain a Response by Potentially Responsible Parties

A search to locate potentially responsible parties was undertaken by the U.S. EPA Office of Regional Counsel (ORC). Data was gathered from OEPA files and the names of companies that had drums bearing their labels on site were noted. In November 1991, 104(e) letters were sent to the property owners and all suspected responsible parties. At this time, a responsible party failed to come forward to assume responsibility for the cleanup and the U.S. EPA initiated a removal action at the site.

During the removal, Frank Boenzi, a civil investigator with the U.S. EPA, established a temporary office in Medina and interviewed area residents, reviewed records, and followed up on drum label information. As a result of this investigation, 104(e) letters have again been sent out to suspected responsible parties whose names appeared on labels of drums recovered from the site. The U.S. EPA ORC will continue to pursue this line of investigation for cost recovery purposes.

1.5 Federal Actions Taken

On January 13, 1992, verbal authorization for $50,000 was given for the removal action at the Bohaty Drum site. On January 17, 1992, an Action Memorandum was signed for $846,280 to mitigate imminent and substantial threats to public health and the environment at the site. On January 17, 1992, a Delivery Order for $250,000 was approved for the Emergency Response Cleanup Service (ERCS) contractor. On February 18, 1992, the Delivery Order ceiling was raised to $540,000 and subsequently to $575,000. The cleanup was conducted by ITEP, Inc., the Region V ERCS contractor. The major phases of the removal action are summarized below.

1.5.1 Preliminary Arrangements - Site Contingency Meeting

On January 14, 1992, OSC Renninger and U.S. EPA TAT met with representatives of various Medina Township and Medina City agencies, including fire departments, police departments, emergency medical services, Hazardous Materials Response Team, and emergency planning agencies. Representatives of community groups and the Medina Township Board of Trustees were also in attendance. The OSC presented his outline for removal operations and answered any questions. A site emergency contingency plan to be followed by local emergency service

groups in the event of an on-site emergency was also drafted at this time.

1.5.2 Preliminary Arrangements - Safety and Support

On January 14, 1992, OSC Renninger, Response Manager (RM) Mike Bowser of ERCS, and TAT met at the site to discuss the scheduled cleanup activities and technical approach. A work zone and perimeter air monitoring schedule was originated at this time and the site safety plan was approved. The support and hot zones were designated, and plans were made to supply the support zone with electricity and city water service. As the nearest tie-in point for these services was on Weatherstone Condominium Association property, the OSC contacted the president of the association to gain access. Verbal approval to make this temporary connection was given by Jerry Buddie, Association Vice President, on January 14, 1992. This was followed by written approval on January 24, 1992.

On January 15, 1992, the ERCS crew and equipment were mobilized to the site and site mobilization was initiated. A decontamination trailer, a break trailer, and a command post trailer were mobilized to the site to establish a support zone. A schematic of the various work zones is presented in Figure 3. During the entirety of the removal action (January 15 through March 23, 1992), a security service was employed to provide site security during non-working hours. On March 23, 1992, security was reduced to 0800 through 1700 hours, Monday through Friday. This arrangement continued until April 24, 1992, when the majority of the containerized waste was shipped off site for disposal.

1.5.3 Extent-of-Contamination Sampling

On January 23, 1992, the TAT collected several samples in an attempt to determine what, if any, impact the decaying drums have had on the surface water and sediments of the Bohaty site. During the initial site assessment, drums containing lab-pack chemicals had been noted to be located in several marsh areas along the southern site perimeter. As surface drainage from these marsh areas was to the northeast and into an unnamed stream that flowed off site, the OSC chose sample points down-gradient from the lab-pack drums. Marsh conditions in this area were created due to installation of an underground sewer line in the mid-1980's. All soil/sediment samples were composites of five discrete points, while the single surface water sample was collected from mid-channel in the stream. A background sample (BC01) was taken to the south of the Bohaty property, behind the Cedar Pointe Plaza shopping area. Analysis of the samples revealed that the decaying drums had no apparent impact on the quality of the stream water or the stream and marsh sediments. Sample locations are illustrated in Figure 4.

1.5.4 Drum Location and Recovery

From January 16 through February 24, 1992, ERCS personnel and TAT members proceeded throughout the Bohaty property, locating abandoned

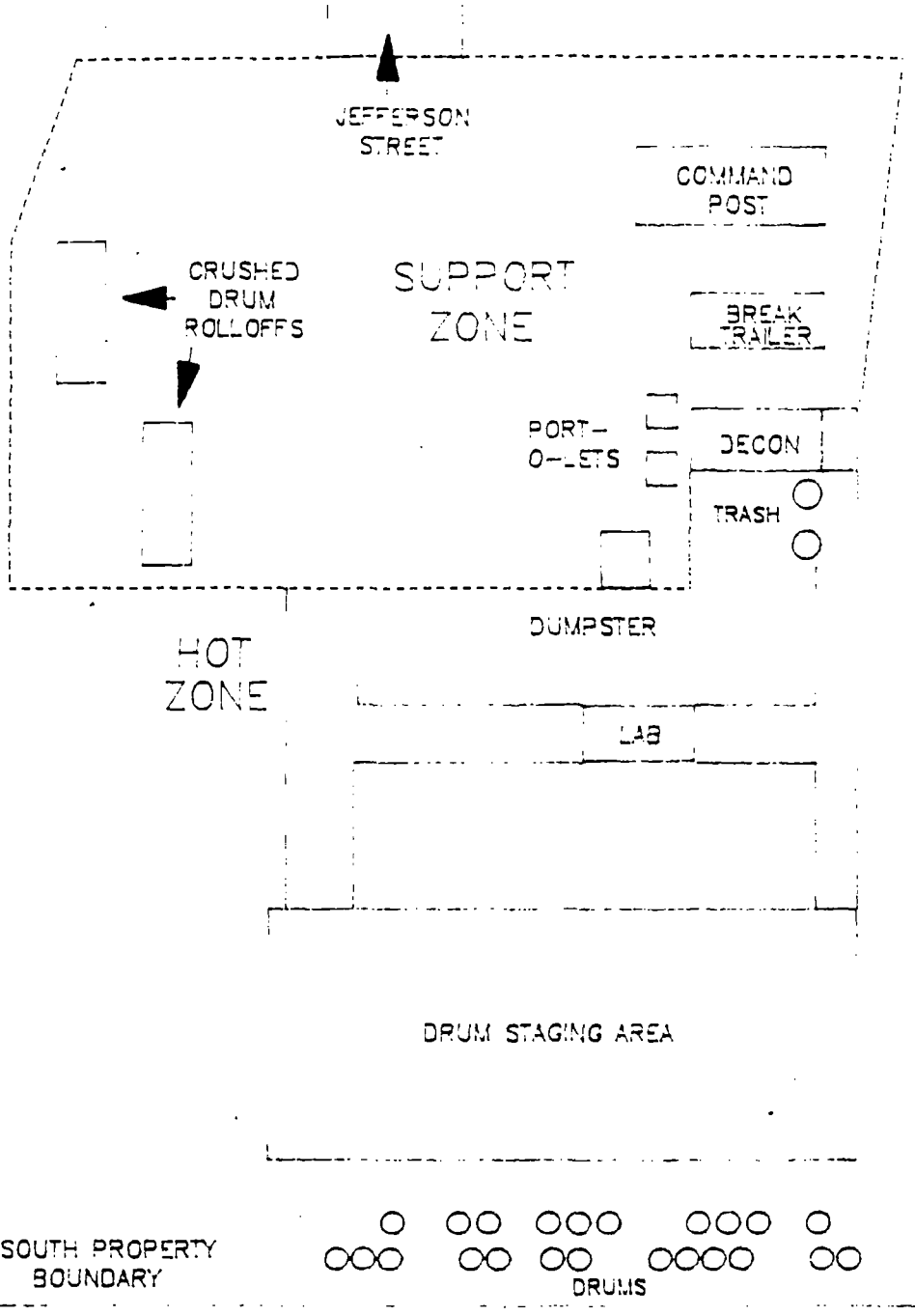

FIGURE 3

SUPPORT ZONE/STAGING AREA

BOHATTY DRUM SITE

MEDINA TOWNSHIP

MEDINA COUNTY, OHIO

NOT TO SCALE

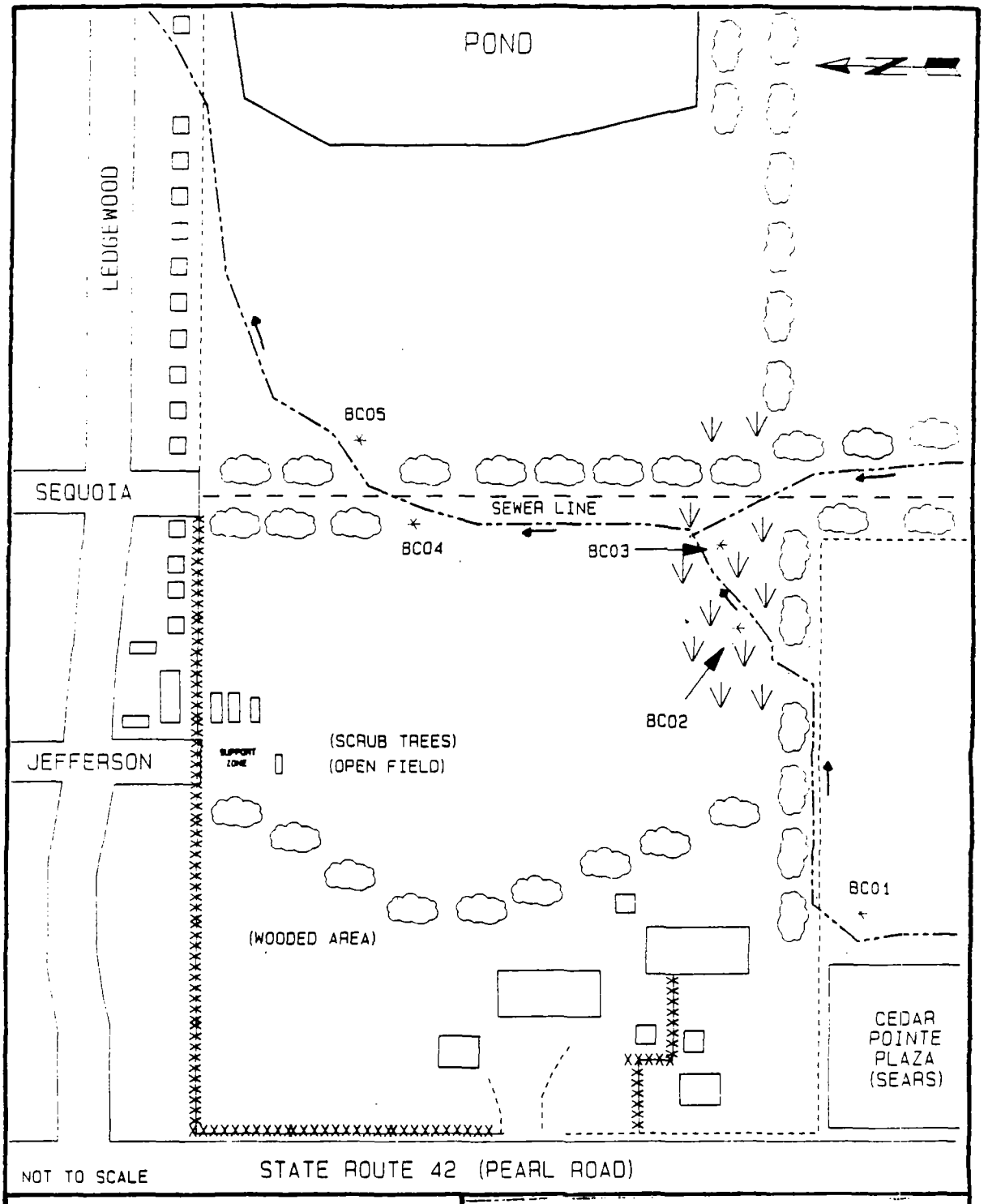

FIGURE 4

EXTENT OF CONTAMINATION
SAMPLE COLLECTION POINTS
BOHATY DRUM SITE
MEDINA TOWNSHIP, OHIO

drums. Drums were inspected and information recorded with respect to drum condition and labeling, contents, whether they had spilled contents to the ground, and whether they demonstrated elevated organic levels.

All drum information was entered into a computer drum information database. Drums that were intact and securely closed were not opened in the field. All drums with contents were placed into 85-gallon overpacks for stabilization, assigned a discrete numerical designation, and transported to a drum staging area to be inventoried and sampled for hazard categorization testing. Several additional drums were located after the main drum recovery effort ended on February 24. These drums were also overpacked, inventoried, and sampled for waste stream assignment. Approximately 1,000 drums were identified during this time.

The location of each abandoned drum recovered was noted and recorded on a site schematic. This schematic is presented as Figure 5.

1.5.5 Drum Sampling and Hazard Categorization

Simultaneous with the recovery and overpacking operation, ERCS chemists opened the retrieved drums, collected samples, and completed drum logs for each drum. All samples underwent standard hazard categorization testing which included tests for pH, flammability, combustibility, oxidation potential, and other disposal parameters. Hazard categorization sheets were completed for each sample. Hazard categorization results were later utilized to assign the various drums into compatible waste streams. A total of 10 waste streams were identified at the Bohaty site. Waste streams included: paint wastes/landfill solids (this included empty, crushed drums); acids; base/neutrals; fuel-solids; fuel-liquids; PCBs; lab-pack chemicals; pesticides/herbicides; UST liquids and solids; and expended PPE. Composite samples of each waste stream were prepared for submission to various disposal facilities.

1.5.6 Pesticide-Containing Drums

During the initial site assessment, a group of drums were discovered to the east of the sewer line that cuts across the Bohaty property (Figure 5). Field observations suggested that these drums contained a pesticide/herbicide material. Laboratory analyses conducted on these materials confirmed that they contained Heptachlor (pesticide) and 2,4-D (herbicide), both on the Target Compound List. As a result, ERCS crew members returned to this area and excavated the surface layer of soil on which these decayed drums had been resting.

1.5.7 Consolidation of Drum Contents

Approximately 550 of the 1,000 drums initially recovered at the Bohaty Drum site were determined to contain a waste stream. The contents of these partial drums were consolidated to make full drums, and the empty drums generated were crushed and placed in 20 cubic yard roll-off boxes

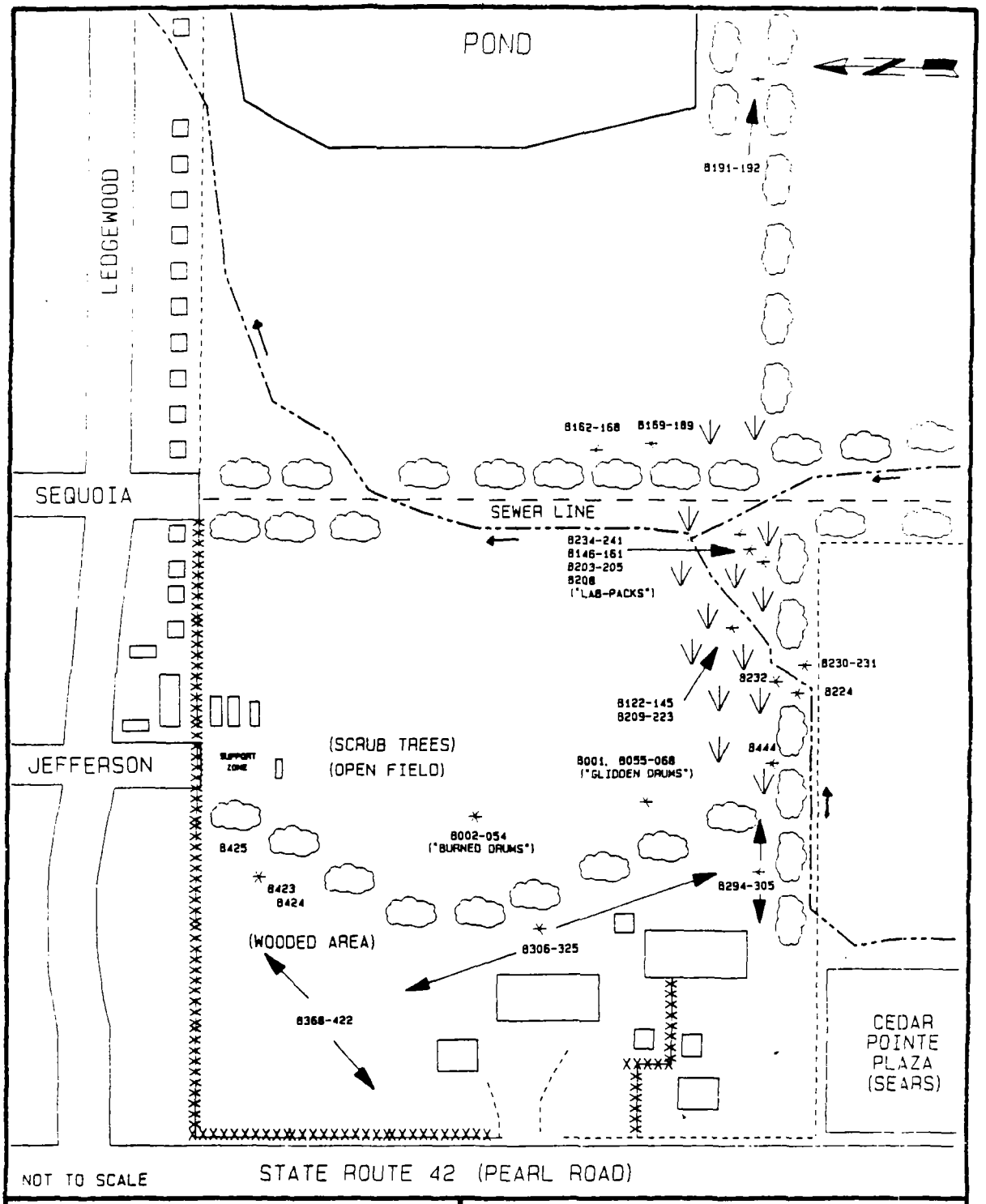

FIGURE 5

ABANDONED DRUM LOCATIONS

BOHATY DRUM SITE

MEDINA TOWNSHIP, OHIO

TREE | MARSH LOCATIONS | DRUM | PROPERTY LINE | STREAM

for off-site disposal. This portion of the consolidation procedure occurred concurrently with the drum recovery operation.

On February 26, 1992, approval was received from Envirosafe Services of Ohio to ship the paint waste/debris waste stream in lined roll-off boxes rather than in steel drums. To this end, all drums designated for that waste stream (based on hazard categorization test results) and those of paint-related debris were emptied into the hazardous materials roll-off boxes and shipped to Envirosafe. Roll-off boxes of paint waste/debris were shipped off site on February 28, March 11, and March 25, 1992. The RCRA-empty drums generated by consolidation were crushed and placed in separate roll-off boxes.

During the sampling and hazard categorization procedures, it was noted that many of the drums in the various waste streams were less than 100 percent full. In order to maintain maximum cost efficiency, these partial drums were combined with other compatible drums within each waste stream. On March 9, 1992, the ERCS crew began consolidating partial drums in the fuel-solids waste stream. These wastes had been approved for disposal at Clark Processing's fuel blending facility. Consolidation, which concluded on March 10, 1992, reduced the number of fuel-solid drums for disposal from 178 to 91. As with all consolidation work, the RCRA-empty drums generated by the process were crushed and shipped to Envirosafe Services for disposal.

On March 11, 1992, the 26 drums of lab-pack chemicals were combined into a lined roll-off box. All bottles were consolidated and the materials were well mixed. Where necessary, lime was added to absorb free liquids. This homogeneous solid was transferred into poly-lined 55-gallon drums on March 13, 1992. Samples of the mixture were collected and sent out to various facilities for disposal approvals.

In total, consolidation of wastes reduced the number of drums with contents to be sent for off-site hazardous waste disposal from the original 1,000 recovered to 309. Approximately 700 RCRA-empty drums were generated by the consolidation procedures. These RCRA-empty drums were crushed and shipped off site for disposal in a total of 11 separate loads.

1.5.8 Overpacking of Drums

In order to better stabilize drums that were in extremely deteriorated condition, overpacking occurred in the field at the time of the drums' initial recovery. Drum overpacking occurred from January 16 through February 24, 1992. Each overpacked drum was assigned a discrete numerical designation which was tracked from the time of initial recovery through the final disposal of that drum. After being moved to the drum staging area, each overpack and drum was opened, inventoried, and sampled. All data was recorded on drum sheets and transferred to a computer drum log.

1.5.9 Crushing Empty Drums

After consolidating the contents of the partially full drums and ensuring that they were RCRA-empty, the approximately 700 empty drums were crushed. Overpacks that were damaged through handling or had been contaminated by a leaking drum were also crushed. Overpacks that remained in good condition were used to ship drums of waste off site for final disposal. The crushed drums and overpacks were placed into eleven 20-yard hazardous materials roll-off boxes that had been rented from Dart Trucking. Each fully loaded roll-off was covered and shipped off site to Envirosafe Services for disposal. Crushed drums were shipped off site between February 13, 1992, and March 25, 1992, and again on April 28, 1992.

1.5.10 Geophysical Surveys

At the OSC's request, personnel from the U.S. EPA's ERT and Response Engineering Analytical Contract (REAC) responded to the site on two separate occasions to conduct magnetometer and electromagnetic surveys to identify the locations of submerged or subsurface drums. An investigation of the pond was initiated due to the proximity of several abandoned drum groups to the pond shoreline. On February 10 through 12, 1992, the team conducted a survey of the pond located along the northern perimeter of the site. As the pond was frozen at the time, the magnetometers were pulled across the surface of the ice. Several potential underwater drum locations were identified. During the second phase of this survey, the crew returned to these points and, after chopping holes in the ice, inspected the areas with an underwater video camera. Of the several "hits" for metal objects their survey recorded, only one was found to be a drum, and this appeared to be empty. The other positive readings were determined to be fencing, auto parts, washing machine, and other metal debris. On February 20, 1992, the submerged drum was recovered from the pond; closer examination revealed it to be a discarded barrel that had been used for burning trash.

At the OSC's request, the ERT also collected several water and sediment samples to be analyzed for VOAs, BNAs, cyanide, metals, PCBs and pesticides. Sample locations included the unnamed stream that drains the marsh area, the pond, and the portion of the unnamed stream that runs through the Stonegate neighborhood. Analytical data from these samples are presented in Attachment E. Analytical results suggested that the stream, pond, and their sediments have not been adversely impacted by the abandoned drums on the Bohaty site.

On March 9 and 10, 1992, the ERT/REAC team returned to site to survey for suspected subsurface drums in three locations along the southern site perimeter. Several potential buried drums were identified during the electromagnetic survey. Magnetic anomalies noted during the survey were plotted on a computer-generated map. On March 12, 1992, the ERCS crew excavated each potential drum location. A total of three drums, one with content and two empty, were recovered. The remainder of the positive responses were determined to be buried metal scrap.

1.5.11 Other Miscellaneous Tasks

Prior to beginning the removal action, the designated hot zone was delineated with a rope fence and flagged with "hazardous materials" banners at 5-foot intervals. U.S. EPA "No Trespassing" and other warning signs were posted at all points of access to the site. The dead end of Jefferson Street, the point of entry to the support zone, was barricaded with a snow fence and posted with warning signs.

Heavy equipment used throughout the drum recovery left deep ruts in the wet, clay soil in several places around the site. Prior to the final crew demobilization of March 18, 1992, these ruts were graded and every effort was made to return the site to pre-removal conditions.

The last drums were shipped off site for final disposal on May 7, 1992. At this time, a front loader was used to remove the earthen ramp placed at the dead end of Jefferson Street. This ramp had been used to allow vehicular access to the site support zone, and its removal effectively eliminated this point of access.

During the installation of subsurface electric and water service to the support zone, a small section of lawn owned by the Weatherstone Condominium Association was damaged. On May 7, 1992, the ERCS contracted with Bill's Landscaping of Valley City, Ohio, for the repair and reseeding of the lawn.

1.5.12 Transportation and Disposal of Wastes

Roll-off boxes containing crushed, RCRA-empty steel drums were shipped off site for disposal at Envirosafe Services, Oregon, Ohio, throughout much of the removal. The first roll-off of crushed drums left the site on February 13, 1992, while that last (11 total) left on March 25, 1992. The waste stream designated paint-landfill/debris was also shipped for off-site disposal at Envirosafe Services during the removal action (February 28, March 11, and March 25, 1992).

Approximately 57 cubic yards of paint waste solids (Hazardous Waste, Solid N.O.S. - D040) were shipped off site for disposal on February 28, March 11, and March 25, 1992. The paint waste was transported by Dart Trucking to Envirosafe Services of Ohio, Oregon, Ohio, for disposal at their landfill. Approximately 199 cubic yards of crushed, RCRA-empty steel drums (non-hazardous, non-regulated material) and 32 cubic yards of spent PPE (Hazardous Waste, Solid N.O.S., NA9189 - D007) were also transported to Envirosafe for disposal. These wastes were transported off-site between February 13 and March 25, 1992. On March 17, 1992, approximately 6,000 pounds of soil containing Heptachlor (a pesticide) and 2,4-D (a herbicide) (Hazardous Waste, Solid N.O.S., NA9189 - U240, P059, D016, D031, F001, F005) were transported by Tri-State Motor Transit Company for off-site disposal. The waste was shipped to ENSCO, Inc., in El Dorado, Arkansas, for incineration. Approximately 1,705 gallons of flammable liquids (Flammable Liquid, UN1993 - D001 and D008) were shipped off site for disposal on March 19, 1992. The flammable

liquids were transported by Dart Trucking to Clark Processing, Dayton, Ohio, for fuel blending. Dart also transported 30,000 pounds of flammable solids (Flammable Solid, UN1325 - D001) to Clark Processing on March 17, 1992, with an additional 9,000 pounds of the same waste being transported on March 19, 1992. On April 1, 1992, one drum (approximately 300 kilograms) of PCB-contaminated waste (Flammable Liquid, D001, D008, PCB) was shipped off site by Dart Trucking. The waste was sent to Aptus, Coffeyville, Kansas, for incineration. Six hundred gallons of Hazardous Waste Liquid, N.O.S. (NA 9189) was transported off site by Dynecol, Inc., to their Detroit, Michigan, facility for treatment and disposal on April 24, 1992. On April 28, 1992, Dart Trucking transported a load of crushed empty drums (non-hazardous, non-regulated) and paint waste solids (Hazardous Waste Solid, N.O.S. - D040) to Envirosafe Services of Ohio, Oregon, Ohio, for landfilling. The load was composed of 4 cubic yards of paint waste and 6 cubic yards of crushed drums. On May 7, 1992, the final shipment of waste was transported from site by Transtec Trucking to Aptus, Lakeville, Minnesota, for incineration. The load consisted of 24 drums (approximately 6,000 kilograms) of Hazardous Waste Solid, N.O.S. (D007, PCB). The preceding information is summarized in the waste dispcsal log which appears as Table 1. All off-site disposal facilities were in compliance with the U.S. EPA off-site policy at the time of transportation and/or disposal of the wastes. All actions taken were consistent with the NCP.

1.5.13 Post-Cleanup Meeting

On March 24, 1992, OSC Renninger and U.S. EPA TAT met with representatives of various Medina Township and Medina City agencies including fire departments, police departments emergency medical services, Hazardous Materials Team, and emergency planning agencies. Representatives of Stonegate Homeowners Association and the Medina Township Board of Trustees were also in attendance. The OSC presented a summary of the removal action to date, answered any questions, and presented a video tape of activities that had occurred in the course of the cleanup. A copy of the video tape was provided to Buck Adams, representative of the Medina County Local Emergency Planning Committee (LEPC).

1.5.14 Post-Cleanup Sampling

Data from disposal analysis of the waste from the lab-pack waste stream revealed the presence of PCBs at a level of over 800 parts per million (ppm). As many of the lab-pack drums had been in poor condition, concern was expressed that the PCBs might have leaked out and contaminated the soils. In response to this concern, the OSC instructed the TAT to collect additional samples from the marsh area from which the lab-pack drums were recovered. These samples, collected on April 2, 1992, were analyzed for PCBs with a detection limit of 1 ppm.

TABLE 1 WASTE DISPOSAL SUMMARY

BOHATY DRUM
MEDINA, OHIO

WASTE CATEGORY	QUANTITY SHIPPED	DATE SHIPPED	MANIFES NUMBER	DISPOSAL METHOD	FACILITY LOCATION
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	14 CUBIC YARDS	03/25/92	21217	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	4 CUBIC YARDS	03/25/92	21216	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	15 CUBIC YARDS	03/25/92	21218	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	18 CUBIC YARDS	02/13/92	21201	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	18 CUBIC YARDS	02/13/92	21202	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	18 CUBIC YARDS	02/21/92	21203	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	18 CUBIC YARDS	02/24/92	21204	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON,OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	18 CUBIC YARDS	02/25/92	21205	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	18 CUBIC YARDS	02/26/92	21206	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	18 CUBIC YARDS	02/27/92	21207	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	18 CUBIC YARDS	02/28/92	21208	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	18 CUBIC YARDS	03/11/92	21211	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NON-HAZARDOUS NON-REGULATED	4 CUBIC YARDS	03/13/92	21213	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH

TABLE 1 WASTE DISPOSAL SUMMARY

BOHATY DRUM
MEDINA, OHIO

WASTE CATEGORY	QUANTITY SHIPPED	DATE SHIPPED	MANIFEST NUMBER	DISPOSAL METHOD	FACILITY LOCATION
RQ WASTE FLAM. LIQUID N.O.S. UN 1993 D008, D001	1705 GALLONS	03/19/92	21216	FUEL BLENDING	CLARK PROCESSIN DAYTON, OH
RQ WASTE FLAM. SOLID N.O.S. UN 1325,D001	9000 POUNDS	03/19/92	21216	FUEL BLENDING	CLARK PROCESSIN DAYTON, OH
RQ WASTE FLAM. SOLID N.O.S. UN 1325,D001	30,000 POUNDS	03/17/92	21215	FUEL BLENDING	CLARK PROCESSIN DAYTON, OH
RQ HAZ. WASTE SOLID N.O.S. NA9189,D007	4 CUBIC YARDS	03/25/92	21217	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
RQ HAZ. WASTE SOLID N.O.S. NA9189,D007	14 CUBIC YARDS	03/25/92	21216	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
RQ HAZ. WASTE SOLID N.O.S. NA9189,DO40	3 CUBIC YARDS	03/25/92	21218	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
RQ HAZ. WASTE SOLID N.O.S. NA 9189,D040	18 CUBIC YARDS	02/28/92	21209	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
RQ HAZ. WASTE SOLID N.O.S. NA 9189,D040	18 CUBIC YARDS	02/28/92	21210	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
RQ HAZ. WASTE SOLID N.O.S. NA 9189,D040	18 CUBIC YARDS	03/11/92	21212	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
RQ HAZ. WASTE SOLID N.O.S. NA9189,U240 P059, etc.	6000 POUNDS	03/17/92	21214	INCINER-ATION	ENSCO, INC EL DORADO,AR
RQ HAZ. WASTE SOLID N.O.S. NA9189,D007	14 CUBIC YARDS	03/13/92	21213	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH

TABLE 1 WASTE DISPOSAL SUMMARY

BOHATY DRUM
MEDINA, OHIO

WASTE CATEGORY	QUANTITY SHIPPED	DATE SHIPPED	MANIFEST NUMBER	DISPOSAL METHOD	FACILITY LOCATION
RQ WASTE FLAM. LIQUID N.O.S. NA 9189 D001, PCB	300 KILO-GRAMS	04/01/92	21219	INCINER-ATION	APTUS COFFEYVILLE, KANSAS
RQ WASTE FLAM. LIQUID N.O.S. NA 9189 D007, PCB	6000 KILO-GRAMS	05/07/92	21222	INCINER-ATION	APTUS LAKEVILLE, MINNESOTA
HAZ. WASTE LIQUID, N.O.S. N.A. 9189	600 GALLONS	04/24/92	21220	TREATMENT	DYNECOL, INC. DETROIT, MI
RQ HAZ. WASTE SOLID N.O.S. NA9189,D040	4 CUBIC YARDS	04/28/92	21221	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH
CRUSHED DRUMS NONHAZARDOUS NONREGULATED	6 CUBIC YARDS	04/28/92	21221	LANDFILL	ENVIROSAFE SERVICES OF OHIO OREGON, OH

On April 8, 1992, the OSC received analytical results for the post-cleanup samples. No PCBs over the detection limit of 1 ppm were discovered at any of the sampling locations.

1.6 Community Relations

The site is located in the midst of an extremely busy commercial area and adjacent to a rapidly growing residential development, and was the subject of many inquiries by the public. News coverage of the removal action was also carried by three area newspapers and a local television station. Throughout the removal, OSC Renninger maintained a positive rapport with both State and local agencies, as well as the community and the press. Throughout the removal action, the OSC briefed the Medina County LEPC coordinator on a weekly basis.

1.7 Cost Summary

ITEP was the primary ERCS contractor under Delivery Order #7460-05-212; all on-site activities were performed by ITEP. Major site activities commenced on January 15, 1992, and final off-site waste disposal was completed on May 7, 1992. Daily expenditures for services provided by ITEP totaled $556,986. A breakdown of contractor expenditures into major categories of labor, equipment, and materials is shown in Table 2.

Any indication of specific costs incurred at the site is only an approximation, subject to audit and final definitization by the U.S. EPA. The OSC Report is not meant to be a final reconciliation of the costs associated with a particular site.

2.0 EFFECTIVENESS OF REMOVAL ACTION

2.1 The Potentially Responsible Parties

No actions were taken by the PRPs. Refer to Section 1.4.

2.2 State and Local Agencies

As discussed in Section 1.2, the OEPA performed two site investigations of the Bohaty property (1987 and 1989) in response to the report of abandoned drums. On September 16, 1991, the OEPA requested assistance from the U.S. EPA in addressing the environmental threat posed by the site. An investigation by the U.S. EPA lead to the subsequent removal action. State and local agencies were cooperative with the U.S. EPA throughout the entire removal action.

2.3 Federal Agencies

The U.S. EPA provided all monetary resources for the removal at the Bohaty Drum site. Under the direct guidance of OSC Steve Renninger, the drums were assessed for compatibility, sampled, consolidated, packed and shipped for disposal as discussed in Section 1.5.

TABLE 2
SUMMARY OF TOTAL ESTIMATED REMOVAL COSTS
Bohaty Drum Site
January 15, 1992, through May 7, 1992

EXTRAMURAL COSTS:		
ERCS Contractor - ITEP (1)		$556,986.00
Labor/Travel/Subsistence		$167,184.00
Equipment		$ 9,325.00
Materials		$ 12,253.00
Subcontractors (Transportation & Disposal)		$368,224.00
TAT Contractor (2)		$ 65,500.00
	Subtotal	$622,486.00
INTRAMURAL COSTS:		
U.S. EPA, OSC - Direct Costs		$ 10,928.00
Indirect Costs (3)		$ 19,306.00
	Subtotal	$ 30,234.00
ESTIMATED TOTAL PROJECT COSTS		$652,720.00
PROJECT CEILING		$846,280.00

(1) Source: ERCS Contractor -ITEP, Inc., Invoice #1212-4 , 9-14-92

(2) Source: Ecology & Environment RORIS System, 10-17-92

(3) Source: Incident Obligation Log, 11-21-92

2.4 Contractors

The ERCS contractor, ITEP, worked efficiently and was cost conscious throughout the removal. The OSC felt that ITEP made a commendable effort in stabilizing a large site under difficult winter (January-March) working conditions.

The TAT contractor, Ecology and Environment, executed effectively throughout the removal action in difficult working conditions. Tasks included air monitoring, sampling, and documentation which provided valuable information to the OSC.

3.0 DIFFICULTIES ENCOUNTERED

3.1 Weather Conditions

The removal action at the Bohaty site was initiated during difficult winter conditions. Heavy snow, frozen ground, and extreme cold created many operational difficulties and health and safety concerns for personnel. Extra break periods were necessary to guard work crews against cold stress injury.

Spring thaw conditions also created a number of difficulties. Portions of the site became inaccessible to heavy equipment due to extremely deep mud. Mud also made it difficult for walking personnel to navigate the site.

The proximity of adjacent residential areas to the abandoned drums and large size of the site (150 acres) created operational and communication problems. To overcome these difficulties, a great degree of coordination was necessary between the OSC, TAT, ERCS RM, and crew to conduct detailed, daily safety meetings, establish daily work zones, and maintain constant radio communication.

3.2 Site Size

Drums were scattered throughout the 150-acre Bohaty site. The size of the site caused operational and communication difficulties. To alleviate this problem, radios were carried by all work crews. This allowed the RM and the OSC to remain in constant contact with the field personnel.

3.3 Safety

The size and condition of the site and weather conditions encountered created a number of unique safety concerns. To overcome these difficulties, a great degree of coordination was necessary between the OSC, TAT, RM, and crew to conduct detailed, daily safety meetings, establish daily work zones, and maintain constant communication.

4.0 OSC RECOMMENDATIONS

Increased communication between local agencies (fire departments, Haz-Mat Team, LEPC) and U.S. EPA will insure prompt investigation and removal actions at uncontrolled hazardous waste sites in the future.